

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
1 September 2005 (01.09.2005)

PCT

(10) International Publication Number  
**WO 2005/080051 A1**

- (51) International Patent Classification<sup>7</sup>: **B25D 9/12**
- (21) International Application Number:  
PCT/FI2005/050045
- (22) International Filing Date: 22 February 2005 (22.02.2005)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
20040278 23 February 2004 (23.02.2004) FI
- (71) Applicant (for all designated States except US): **SANDVIK TAMROCK OY** [FI/FI]; Pihtisulunkatu 9, FI-33330 Tampere (FI).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **KESKINIVA, Markku** [FI/FI]; Pikkusaarenkuja 5 B 32, FI-33410 Tampere (FI). **MÄKI, Jorma** [FI/FI]; Sorvajärventie 35, FI-34140 Mutala (FI). **MAURI, Esko** [FI/FI]; Kolkontie 174, FI-39500 Ikaalinen (FI). **AHOLA, Erkki** [FI/FI]; Topiaksentie 11, FI-36240 Kangasala (FI). **HELIN, Aimo** [FI/FI]; Lannemäentie 49 F 14, FI-33340 Tampere (FI).
- (74) Agent: **KOLSTER OY AB**; Iso Roobertinkatu 23, P.O. Box 148, FI-00121 Helsinki (FI).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

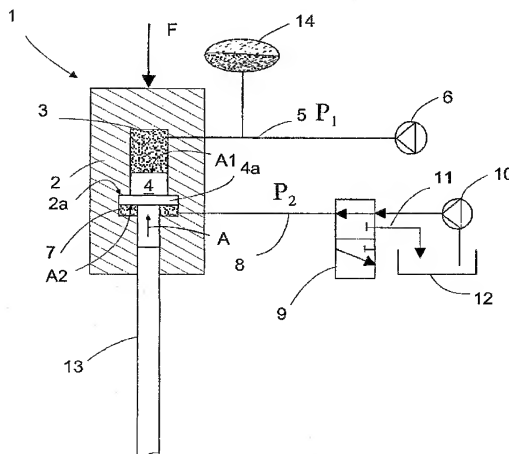
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Declarations under Rule 4.17:**

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS,

[Continued on next page]

(54) Title: PRESSURE-FLUID-OPERATED PERCUSSION DEVICE



(57) Abstract: The invention relates to a pressure-fluid-operated percussion device comprising a frame (2) allowing a tool (13) to be arranged therein movably in its longitudinal direction, means for feeding pressure liquid to the percussion device (1) and for returning pressure liquid to a pressure liquid tank, and means for producing a stress pulse in the tool by utilizing pressure of the pressure liquid. The invention includes a pressure liquid source for maintaining pressure in the working pressure chamber (3), and means for intermittently feeding pressure liquid to the percussion device (1) such that the pressure liquid pushes a transmission piston into a predetermined backward position such that pressure liquid is discharged from the working pressure chamber (3), and for alternately allowing pressure liquid to be discharged rapidly from the percussion device (1) so that the pressure of the pressure liquid in the working pressure chamber (3) and pressure liquid flowing thereto from the pressure liquid source pushes the transmission piston (4) towards the tool (13), thus generating a stress pulse in the tool (13).

WO 2005/080051 A1



JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

— of inventorship (Rule 4.17(iv)) for US only

**Published:**

— with international search report

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*